DHS Science and Technology Directorate

Transition to Practice

Turning Cybersecurity Research into a Reality

Cybersecurity research is seldom commercialized, a fact all too familiar to researchers. The White House's Networking and Information Technology Research and Development (NITRD) program recognizes the potential gains that could be achieved through better commercialization practices. In 2011, NITRD published the Comprehensive National Cybersecurity Initiative (CNCI), which listed accelerating the transition of cybersecurity research into widespread deployment and use via the marketplace as one of the best ways to improve the nation's cybersecurity infrastructure. In response, the Department of Homeland Security tasked the Science and Technology Directorate (S&T) Cyber Security Division (CSD) with creating the Transition to Practice (TTP) program.

How it works

The TTP program, which was initiated in the spring of 2012, aligns with CNCI's objectives to "coordinate and redirect research and development efforts, and define and develop enduring leap-ahead technology, strategies and programs." It builds on S&T's process of funding projects through the full research and development life cycle: research, development, test and evaluation, pilots and transition.

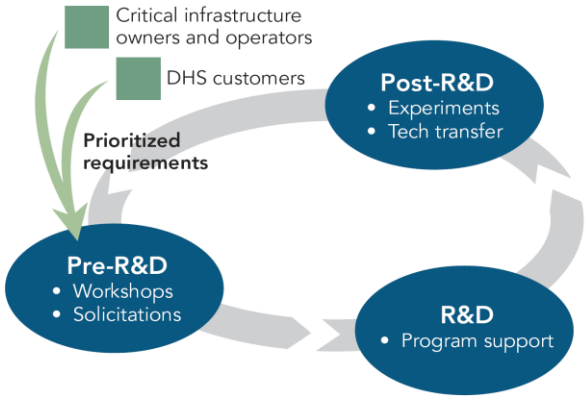
The federal government spends more than $1 billon on unclassified cybersecurity research every year. However, very little of that research is ever integrated into the marketplace. The divide between the research phase and commercialization phase is commonly referred to as the "Valley of Death." Research is often stranded here because researchers do not have the necessary resources to take the research to the marketplace, limited communication between researchers and the private sector commercialization community, and the lack of a clear understanding of the transition process among researchers, the private sector and end users.

TTP goals

In accordance with NITRD's recommendations for accelerating technology transition, the TTP program's goals are to:

- Identify mature technologies that address an existing or imminent cybersecurity gap in public or private systems that impact national security,
- Identify and fund necessary improvements identified during pilot programs and test and evaluation activities,
- Introduce new cybersecurity technology throughout the Homeland Security Enterprise via partnerships and commercialization.

The TTP program targets federally funded cybersecurity research that demonstrates a high probability of successful transition to the commercial market within two years and is expected to have a notable impact on the cybersecurity of our nation's networks or systems.



The value

The TTP program is developing better lines of communication between researchers and the investment community and funding activities that will improve the likelihood that technologies will transition. For example, S&T conducts operational test and evaluation to ensure stability, functionality and refinement through technology pilots. Research teams will also be active participants in the commercialization process, thereby gaining valuable and lasting hands-on experience with the commercialization process.

The goal of the TTP program is not only to accelerate the transition of cybersecurity research, but also to build lasting connections and processes that can be adopted by others and become self-sustaining—in essence, to build a lasting bridge over the Valley of Death.

Next steps

Since 2012, the TTP program has brought on technologies created at the Department of Energy and Department of Defense national laboratories, National Science Foundation grantees, as well as Federally Funded Research and Development Centers and University Affiliated Research Centers. Of the 17 technologies brought into the program the first two years, nine of those 17 are under legal or exclusive arrangements for commercialization.

Homeland Security
Science and Technology

To learn more about the Transition to Practice program, contact ST.TTP@hq.dhs.gov.

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